

## VOLUME CONTENTS

### Number 1

- |   |    |   |
|---|----|---|
| E. A. FOUMENY and J. MA   | 1  | Performance prediction of cyclic thermal regenerators utilising latent heat of packing matrix                           |
| CHIH WU and W. H. SCHULDEN                                      | 13 | Maximum obtainable specific power of high-temperature waste heat engines  |
| L. M. SUN, N. BEN AMAR and F. MEUNIER                           | 19 | Numerical study on coupled heat and mass transfers in an adsorber with external fluid heating                           |
| T. HOSOKAWA, Y. FUJIWARA, Y. OGAMI, Y. KAWASIMA and Y. YAMASAKI | 31 | Heat transfer characteristic of dropwise condensation on an inclined circular tube                                      |
| B. MOHANTY and G. PALOSO JR                                     | 41 | Enhancing gas turbine performance by intake air cooling using an absorption chiller                                     |
| C. D. RAKOPOULOS, E. C. ANDRITSAKIS and D. T. HOUNTALAS         | 51 | The influence of the exhaust system unsteady gas flow and insulation on the performance of a turbocharged diesel engine |
| J. M. GORDON and KIM CHOON NG                                   | 73 | A general thermodynamic model for absorption chillers: theory and experiment  |
| G. T. POLLEY  | 85 | Selecting stream splits in heat exchanger network design  |

### Number 2

## 1st International Conference on Combined Cycle Power Generation

- |   |     |  |
|---|-----|--|
| P. BASU   | 95  | Foreword   |
| R. G. NARULA  | 97  | Salient design considerations for an ideal combined cycle power plant                      |
| A. O. ONG'IRO, V. I. UGURSAL, A. M. AL Taweel and D. K. BLAMIRE | 105 | Simulation of combined cycle power plants using the Aspen Plus shell                       |
| P. K. NAG and D. RAHA   | 115 | Thermodynamic analysis of a coal-based combined cycle power plant                          |
| M. F. FALCETTA and E. SCIUBBA                                   | 131 | A computational, modular approach to the simulation of powerplants                         |
| A. PASHA and S. JOLLY   | 147 | Combined cycle heat recovery steam generators: optimum capabilities and selection criteria |

- |   |     |   |
|---|-----|---|
| N. V. R. S. S. SUBRAHMANYAM,<br>S. RAJARAM and<br>N. KAMALANATHAN                             | 155 | HRSBs for combined cycle power plants   |
| K. M. SELLAKUMAR and<br>T. W. LAMAR   | 163 | Application of pressurized circulating fluidized bed technology for combined cycle power generation         |
| I. HEINBOCKEL and F. N. FETT  | 171 | Simulation of a combined cycle power plant based on a pressurized circulating fluidized bed combustor       |
| LU PENGFEI  | 179 | Design considerations for PFBC gas expander   |
| SHI MINGXIAN, LIU JUNREN,<br>LIU GUORONG, JIN YOUHAI,<br>YAO ZHIBIAO and LIU QIANXIN          | 191 | The cyclone separators performances under high temperature in PFBC unit                                     |
| S. RAJAGOPALA RAO,<br>R. S. RANGAN, S. G. PRAKASH,<br>S. CHAKRAVARTI and<br>S. KRISHNAMOORTHY | 199 | Developmental status of BHEL's high temperature high pressure (HTHP) circulating bed granular filter (CBGF) |
| S. K. GANGWAL, R. GUPTA and<br>W. J. MCMICHAEL  | 205 | Hot-gas cleanup—sulfur recovery. Technical, environmental, and economic issues                              |
| E. N. PRUTKOVSKY and<br>E. K. CHAVCHANIDZE  | 215 | Combined cycle steam and gas units with the clean-up of the flue gases from carbon dioxide                  |
| A. CHAKMA, A. K. MEHROTRA<br>and B. NIELSEN   | 231 | Comparison of chemical solvents for mitigating CO <sub>2</sub> emissions from coal-fired power plants       |

### Number 3

- |   |     |   |
|---|-----|---|
| O. ANNAKOU and P. MIZSEY                      | 241 | Rigorous investigation of heat pump assisted distillation   |
| JINCAN CHEN                                   | 249 | Optimal choice of the performance parameters of an absorption heat transformer                                  |
| K. ABRAHAMSSON, A. GIDNER<br>and Å. JERNQVIST | 257 | Design and experimental performance evaluation of an absorption heat transformer with self-circulation          |
| S. DEVOTTA                                    | 273 | Alternative heat pump working fluids to CFCs  |
| TONG SEOP KIM<br>and SUNG TACK RO             | 281 | Effect of control modes and turbine cooling on the part load performance in the gas turbine cogeneration system |
| M. P. MAIYA                                   | 293 | Analysis of modified counter-flow cooling towers  |

R. M. LAZZARIN

305 Heat pumps in industry II: applications

J. MA SALA LIZARRAGA  
and A. V. S. BAEZA AGUADO

Case Study

319 Cogeneration with gas turbines for dryers and  
hot water boilers

#### Number 4

V. TUFANO

327 On the performance of absorption heat pump-  
transformers

T. NGUYEN, P. JOHNSON,  
A. AKBARZADEH, K. GIBSON and  
M. MOCHIZUKI

333 Design, manufacture and testing of a closed  
cycle Thermosyphon Rankine Engine

N. H. AFGAN and A. I. LEONTIEV

347 Instrument for thermal radiation flux measure-  
ment in high temperature gas flow (Cuernavaca  
Instrument)

CHIH WU

351 Maximum obtainable power of a Carnot com-  
bined power plant

M. A. DARWISH

357 Fuel cost charged to desalters in co-generation  
power-desalting plants

M. K. SARWAR and  
P. MAJUMDAR

369 Thermal conductivity of wet composite porous  
media

K. H. SUN, C. Y. LIU  
and K. C. LEONG

383 The effective length of a flat plate heat pipe  
covered partially by a strip heater on the  
evaporator section

#### Number 5

P. H. G. ALLEN and  
T. G. KARAYIANNIS

Review Paper  
389 Electrohydrodynamic enhancement of heat  
transfer and fluid flow

R. BEST, W. RIVERA  
and A. OSKAM

425 Thermodynamic design data for absorption heat  
pump systems operating on water-carrol. Part I:  
cooling

R. BEST, W. RIVERA  
and A. OSKAM

435 Thermodynamic design data for absorption heat  
pump systems operating on water-carrol. Part II:  
heating

R. BEST, W. RIVERA  
and A. OSKAM

445 Thermodynamic design data for absorption heat  
pump systems operating on water-carrol. Part  
III: simultaneous cooling and heating

J. C. HO, N. E. WIJEYSUNDERA,  
S. RAJASEKAR and  
T. T. CHANDRATILLEKE

457 Performance of a compact, spiral coil heat  
exchanger



S.-I. GUSTAFSSON	469	Does postponed retrofitting save money?
J. E. A. ROY-AIKINS	473	An investigation of the factors that determine the attractiveness of cogeneration
A. R. LUKITOBUDI, A. AKBARZADEH, P. W. JOHNSON and P. HENDY	481	Design, construction and testing of a thermo-syphon heat exchanger for medium temperature heat recovery in bakeries
S. V. KONEV, J. L. WANG and C. J. TU	493	Characteristics of a heat exchanger based on a collector heat pipe
	503	Announcement
	I	Software Survey Section
		<b>Number 6</b>
S. Y. HO, R. E. HAYES and R. K. WOOD	505	Simulation of the dynamic behaviour of a hydronic floor heating system
S. M. SAMI and P. J. TULEJ	521	A new design for an air-source heat pump using a ternary mixture for cold climates
G. H. W. VAN BENTHEM, G. CACCIOLA and G. RESTUCCIA	531	Regenerative adsorption heat pumps: optimization of the design
S. B. RIFFAT, A. P. WARREN and R. A. WEBB	545	Rotary heat pump driven by natural gas
C. A. SALTA and D. G. KRÖGER	555	Effect of inlet flow distortions on fan performance in forced draught air-cooled heat exchangers
I. PILATOWSKY, W. RIVERA, R. BEST and F. A. HOLLAND	563	Thermodynamic design data for absorption heat pump systems operating on monomethylamine-water. Part I: cooling
I. PILATOWSKY, W. RIVERA, R. BEST and F. A. HOLLAND	571	Thermodynamic design data for absorption heat pump systems operating on monomethylamine-water. Part II: heating
I. PILATOWSKY, W. RIVERA, R. BEST and F. A. HOLLAND	583	Thermodynamic design data for absorption heat pump systems operating on monomethylamine-water. Part III: simultaneous cooling and heating
E. D. ROGDAKIS and K. A. ANTONOPOULOS	591	Thermodynamic cycle, correlations and nomograph for $\text{NH}_3\text{-NaSCN}$ absorption refrigeration systems
		Technical Note
V. E. STYLIARAS	601	A freon-ammonia comparison applied in a mixed power cycle
	605	Announcement

## Number 7

- |   |     |   |
|---|-----|---|
| D. A. REAY  | 607 | Editorial   |
| A. G. DAVIDSON, R. J. JACHUCK,<br>M. T. THAM and C. RAMSHAW | 609 | On the dynamics and control of a polymer film compact heat exchanger  |
| B. SEYEDAN, P. L. DHAR,<br>R. R. GAUR and G. S. BINDRA      | 619 | Computer simulation of a combined cycle power plant   |
| I. SAUIMC, A. AKBARZADEH<br>and P. JOHNSON                  | 631 | Characteristics of two-phase closed thermosiphons for medium temperature heat recovery applications                                       |
| T. WATANABE and A. KANZAWA                                  | 641 | Second law optimization of a latent heat storage system with PCMs having different melting points   |
| J. SIQUEIROS, C. L. HEARD and<br>F. A. HOLLAND              | 655 | The commissioning of an integrated heat pump-assisted geothermal brine purification system  |
| S. C. KAUSHIK and M. SINGH                                  | 665 | Feasibility and design studies for heat recovery from a refrigeration system with a Canopus heat exchanger                                |
| S. C. KAUSHIK, S. S. VERMA and<br>A. CHANDRA                | 675 | Solar-assisted liquid metal MHD power generation: a state of the art study  |
| C. D. RAKOPOULOS,<br>G. N. TAKLIS and E. I. TZANOS          | 691 | Analysis of combustion chamber insulation effects on the performance and exhaust emissions of a DI diesel engine using a multi-zone model |
|   | 707 | Announcement  |

## Number 8

- |  |     |  |
|--|-----|--|
| D. A. REAY                                     | 709 | Editorial  |
| I. W. EAMES, S. APHORNRATANA<br>and DA-WEN SUN | 711 | The jet-pump cycle—a low cost refrigerator option powered by waste heat  |
| JINCAN CHEN and B. ANDRESEN                    | 723 | Optimal analysis of primary performance parameters for an endoreversible absorption heat pump  |
| K. A. ANTONOPOULOS and<br>F. DEMOCRITOU        | 733 | An analytical superposition approach to wall heat conduction under arbitrary temperature perturbations for air-conditioning applications |
| V. E. STYLIARAS                                | 749 | A mixed cycle for converting heat to mechanical work   |

C. CHOUDHURY, P. M. CHAUHAN and H. P. GARG	755	Performance and cost analysis of two-pass solar air heaters
Y. M. ABDEL-RAHIM	775	Exergy analysis of radial inflow expansion turbines for power recovery
N. MARTINS, M. G. CARVALHO, N. H. AFGAN and A. I. LEONTIEV	787	A new instrument for radiation heat flux measurement—analysis and parameter selection
M. FEHR	797	Technical Note The exergy carry-over index for a utility system
	I	Title Page, Volume Contents and Author Index for Volume 15

